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Docket No.: 57454-279

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

Hiromitsu SUGIMOTO, et al.

Application No.: 09/987,893

Patent No.: 6,747,466 B2

Filed: November 16, 2001

Issued: June 8, 2004

Customer Number: 20277

Confirmation Number: 7560

Group Art Unit: 2829

Examiner: Nguyen, Tung X

Certificate  
OCT 22 2004  
of Correction

For: SUBSTRATE TESTING APPARATUS AND SUBSTRATE TESTING METHOD :

REQUEST FOR CERTIFICATE OF CORRECTION UNDER 37 CFR 1.322

Mail Stop 4 (Certificate of Correction)

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

In reviewing the above-identified patent, a printing error was discovered therein requiring correction in order to conform the Official Record in the application.

The error noted is set forth on the attached copy of form PTO-1050 Rev. 2-93 in the manner required by the Commissioner's Notice.

Specifically, in Column 7, printed Claim 4, line 1 of the claim, change "The" to --A--. The correct version can be found in allowed claim 5, as shown in the amendment of July 1, 2003. Copies of the relevant pages of the amendment are attached. Please note that printed claim 4 corresponds to allowed claim 5.

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09/987,893

Patent 6,747,466

The change requested herein occurred as a result of printing the Letters Patent and the Certificate should be issued without expense under Rule 322 of the Rules of Practice. Accordingly, Applicants request issuance of the Certificate of Correction.

Please charge any shortage in fees due in connection with the filing of this paper to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

MCDERMOTT WILL & EMERY LLP



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**Date: October 20, 2004**

WDC99 993854-1.057454.0279

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UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 6,747,466 B2

DATED : June 08, 2004

INVENTOR(S) : Hiromitsu SUGIMOTO, et al.

It is certified that error appears in the above-identified patent and that said Letter Patent is hereby corrected as shown below:

Column 7, Claim 4, first line,  
change "The" to --A--.

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Docket No.: 57454-279

COPY

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Application of

: Response Under 37 CFR 1.116 - Expedited Procedure

Yomitsu SUGIMOTO, et al.

Serial No.: 09/987,893

: Group Art Unit: 2829

Filed: November 16, 2001

: Examiner: Nguyen, Tung X

For: SUBSTRATE TESTING APPARATUS AND SUBSTRATE TESTING METHOD

Box AF

Mail Stop Fee Amendment

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Dear Sir:

Transmitted herewith is an Amendment in the above-identified application.

☐ No additional fee is required.

☐ Applicant is entitled to small entity status under 37 CFR 1.27

☐ Also attached:

The fee has been calculated as shown below:

	NO. OF CLAIMS	HIGHEST PREVIOUSLY PAID FOR	EXTRA CLAIMS	RATE	FEE
Total Claims	6	20	0	\$18.00 =	\$0.00
Independent Claims	4	3	1	\$84.00 =	\$84.00
Multiple claims newly presented					\$0.00
Fee for extension of time					\$0.00
Total of Above Calculations					\$84.00

☒ Please charge my Deposit Account No. 500417 in the amount of \$84.00. An additional copy of this transmittal sheet is submitted herewith.

☒ The Commissioner is hereby authorized to charge payment of any fees associated with this communication or credit any overpayment, to Deposit Account No. 500417, including any filing fees under 37 CFR 1.16 for presentation of extra claims and any patent application processing fees under 37 CFR 1.17.

Respectfully submitted,

MCDERMOTT, WILL & EMERY

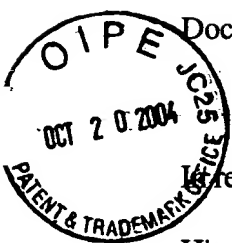
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Date: July 1, 2003

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Docket No.: 57454-279

PATENT

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Is re Application of

: **RESPONSE UNDER 37 CFR 1.116**

: **EXPEDITED PROCEDURE**

Hiromitsu SUGIMOTO, et al.

Serial No.: 09/987,893

: Group Art Unit: 2829

Filed: November 16, 2001

: Examiner: Nguyen, Tung X

For: SUBSTRATE TESTING APPARATUS AND SUBSTRATE TESTING METHOD

**AMENDMENT UNDER 37 CFR 1.116**

Box AF

Mail Stop Fee Amendment

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

The following Amendment and Remarks are submitted in response to the Office Action dated April 8, 2003.

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AMENDMENTS TO THE CLAIMS

Claim 1 (Canceled)

2. (Previously Amended) A substrate testing apparatus comprising:
- a first rail group made of a plurality of rails disposed in parallel with each other;
  - a second rail group made of a plurality of rails disposed in parallel with each other in a direction that crosses said first rail group;
  - a plurality of probe units disposed to cover respective intersections of the rails included in said first rail group and the rails included in said second rail group, all of said probe units being concurrently movable along the rails included in said first rail group and said second rail group;
  - and
  - corresponding interval maintaining means for keeping each rail included in said first rail group at an interval corresponding to an arrangement of locations to be measured on a substrate subjected to measurement,
  - wherein said plurality of probe units each comprise a probing needle to be brought into contact with a surface of said substrate.

3. (Original) The substrate testing apparatus according to claim 2, wherein said corresponding interval maintaining means maintains the interval after changing the interval every time the arrangement of the locations to be measured changes.

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4. (Original) The substrate testing apparatus according to claim 2, wherein said corresponding interval maintaining means comprises equal interval maintaining means for keeping each rail included in said first rail group at an equal interval.

5. (Currently Amended) ~~The substrate testing apparatus according to claim 4,~~  
~~further comprising:~~ A substrate testing apparatus comprising:

a first rail group made of a plurality of rails disposed in parallel with each other;

a second rail group made of a plurality of rails disposed in parallel with each other in a direction that crosses said first rail group;

a plurality of probe units disposed to cover respective intersections of the rails included in said first rail group and the rails included in said second rail group, all of said probe units being concurrently movable along the rails included in said first rail group and said second rail group, wherein said plurality of probe units each comprise a probing needle to be brought into contact with a surface of said substrate;

corresponding interval maintaining means for keeping each rail included in said first rail group at an interval corresponding to an arrangement of locations to be measured on a substrate subjected to measurement,

displacement measuring means for measuring a displacement of one or more observation points on the substrate subjected to measurement; and

displacement measurement value feedback means for setting the interval of each rail included in said first rail group, as defined by said equal interval maintaining means, in accordance with a displacement measurement value given by said displacement measuring means,

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wherein said corresponding interval maintaining means comprises equal interval maintaining means for keeping each rail included in said first rail group at an equal interval.

6. (Currently Amended) ~~The substrate testing apparatus according to claim 4,~~  
~~further comprising:~~ A substrate testing apparatus comprising:

a first rail group made of a plurality of rails disposed in parallel with each other;

a second rail group made of a plurality of rails disposed in parallel with each other in a direction that crosses said first rail group;

a plurality of probe units disposed to cover respective intersections of the rails included in said first rail group and the rails included in said second rail group, all of said probe units being concurrently movable along the rails included in said first rail group and said second rail group, wherein said plurality of probe units each comprise a probing needle to be brought into contact with a surface of said substrate;

corresponding interval maintaining means for keeping each rail included in said first rail group at an interval corresponding to an arrangement of locations to be measured on a substrate subjected to measurement,

temperature measuring means for measuring a temperature; and

temperature measurement value feedback means for setting the interval of each rail included in said first rail group, as defined by said equal interval maintaining means, in accordance with a temperature measurement value given by said temperature measuring means,

wherein said corresponding interval maintaining means comprises equal interval maintaining means for keeping each rail included in said first rail group at an equal interval.

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7. (Previously Amended) A substrate testing method using a plurality of probe units disposed to cover respective intersections of rails included in a first rail group made of a plurality of rails disposed in parallel with each other and rails included in a second rail group made of a plurality of rails disposed in parallel with each other in a direction that crosses said first rail group, said plurality of probe units being movable along the rails included in said first rail group and said second rail group and each comprising a probing needle to be brought into contact with a surface of a substrate subjected to measurement, wherein said probing needles are brought into contact with said substrate in a state in which an arrangement of said plurality of probe units is concurrently adjusted so that an interval between said probing needles corresponds to an arrangement of locations to be measured on said substrate.

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REMARKS

At the time of the Office Action dated April 8, 2003, claims 2-7 were pending in this application. The Examiner rejected claims 2-4 and 7. Claims 5 and 6 were objected to as being dependent upon a rejected base claim and indicated allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. By way of this amendment, claims 5 and 6 have been written in independent form including the limitations of base claim 2 and intervening claim 4. Care has been exercised to avoid the introduction of new matter. Support for the amendment is found in the original claims. Accordingly, claims 5 and 6 are believed to be in condition for allowance. Thus, the only remaining issue pivots about the patentability of claims 2, 3, 4 and 7.

Claims 2-4 and 7 were rejected under 35 U.S.C. § 102(e) as being anticipated by Root (U.S. Pat. No. 6,201,402). The Examiner referenced FIGS. 1a-1d and asserted that Root discloses the apparatus of claims 2-4 and the testing method of claim 7. Applicants traverse.

In response to Applicants' arguments filed on February 25, 2003, the Examiner stated that it appears that the plurality of probe units may be moved concurrently in X and Y directions, or alternatively, each probe may be moved independently. The Examiner relied on col. 1, lines 49-62 to support this assertion, which is repeated for convenience:

The present invention provides a system and method for a plurality of probe titles and a probe platform for electrically probing a semiconductor wafer over a broad area of the semiconductor wafer. Nine ceramic tiles are configured in a flat three by three matrix, and are held in place by a probing platform. Each tile may be moved independently in an X and Y direction. The probe platform has three control knobs on the side to move a tile in the X direction and three control knobs on the front to move a tile in the Y direction. The control knobs are attached to transmission shafts which slide back and forth into three ball detent positions. The ball detent positions determine which tile is engaged and can be manipulated. The ceramic tiles hold self-aligning tungsten probe tips to permit semiconductor wafer testing over a wide temperature range.

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It appears that the Examiner relied on the single phrase, "may be moved", as evidence that the plurality of probe units is capable of moving concurrently in X and Y directions, or alternatively, each probe may be moved independently. However, Applicants respectfully, but strenuously, disagree with the Examiner's interpretation of the reference.

Root discloses at col. 1, lines 49-62, that each tile is moved independently in an X and Y direction with the control knobs 108 and 107. However, in contrast, claim 2 describes in pertinent part, that all of said probe units being concurrently (i.e. all at a time) movable along the rails included in the first rail group and the second rail group. Similarly, claim 7 recites, in pertinent part, that the plurality of probe units is concurrently adjusted. Applicants submit that Root is not capable of concurrently moving or adjusting a plurality of probing units along the rails, since as stated above, each tile is moved independently in a X and Y direction with the control knobs 108 and 107.

The Examiner's attention is invited to the control knobs 107, 108 of Root, depicted in Figure 1A. As stated at col. 1, lines 49-62, Root discloses that the probe platform has three control knobs on the side to move a tile in the X direction and three control knobs on the front to move a tile in the Y direction. **The control knobs are attached to transmission shafts which slide back and forth into three ball detent positions. The ball detent positions determine which tile is engaged and can be manipulated.** Moreover, at col. 3, lines 19-31, Root further details the control knob structure as follows:

A front transmission shaft 109 or a side transmission shaft 111 is connected to three gears 101. The front transmission shaft 109 or the side transmission shaft 111 transmits rotational power to the connected gears 101. Each round front control knob 107 and front transmission shaft 109 or each round side control knob 108 and side transmission shaft 111 is connected to a round detent strike 123. **The detent strike 123, together**

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with a ball plunger 135, permits the user to engage only one gear at a time by sliding it back and forth in three detent positions 102. A gear 101 is connected to a front transmission shaft 109 or a side transmission shaft 111. The gear transmits rotational input from the front transmission shaft 109 or the side transmission shaft 111 to a stub shaft gear 103 (emphasis added).

Thus, Root's ball detent positioning mechanism prevents the user from concurrently moving all of said probe units concurrently along the rails, since the user must select from one of the three available ball detent positions, and as stated above, the ball detent position determines which tile (singular) is engaged and manipulated. Accordingly, Root fails to disclose every limitation of the present claims and therefore the rejection of claims 2-4 and 7 under 35 U.S.C. § 102(e) is not legally viable. *In re Rijckaert*, 9 F.3d 1531, 28 USPQ2d 1955 (Fed. Cir. 1993); *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 221 USPQ 481 (Fed. Cir. 1984).

It is believed that all pending claims are now in condition for allowance. Applicant therefore respectfully requests an early and favorable reconsideration and allowance of this application. If there are any outstanding issues which might be resolved by an interview or an Examiner's amendment, the Examiner is invited to call Applicant's representative at the telephone number shown below.

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To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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